



To: Bruce Suchomel

RE: Petroglyph Antelope Creek Waterflood MAIP Redetermination

Petroglyph would like to formally request that all of the MAIP for the wells under Area Permit UT20736 be recalculated using ISIP to determine fracture gradient. We would like to use the formula below.

$$MAIP = \frac{ISIP}{1.015} + .433 \times \left( \frac{Depth}{20} - (.433 \times \frac{Depth}{20}) \right) \times SG_{H2O}$$

Where:

ISIP = Instantaneous Shut in Pressure of the top open zone

Depth = Depth of the top open perforation.

SG<sub>H2O</sub> = 1.015

The reason this redetermination is being requested is to make sure that all wells are using the same method for calculating MAIP both in the past and in permitting future injectors. We chose the ISIP method, because it is our belief that it is the most repeatable measurement that is also accurate.

Please see the attached schedule for current MAIP and requested MAIP. All MAIP over 2500 PSI have been limited to 2500 PSI.

We appreciate your consideration in this matter.

Regards,

Beau Judge

Well Name	First Date of Injection	Year	Act MAIP	Top Perf	Zone	EPA Frac Grad(ass ume SG)		PGEI Calc Frac Grad SG		Calc MAIP Permit Number	
18-01	7/8/2006	2006	1470	4026	B07.2	0.80	N/A	#VALUE!	1.015	1470	UT20736-06700
29-06	1/2/1998	1998	2015	4314	B08.1	0.91	1509	0.79453	1.015	1531.635	UT20736-04416
30-02	7/23/2007	2007	1625	4478	B11	0.80	N/A	#VALUE!	1.015	1625	UT20736-07416
05-10	4/21/1995	1995	2055	4426	B08.1	0.90	1620	0.811	1.015	1644.3	UT20736-04234
21-07	2/1/2007	2007	1708	4666	C04	0.81	N/A	#VALUE!	1.015	1708	UT20736-07116
30-09	7/18/2005	2005	2152	4346	B08.2	0.93	1700	0.83653	1.015	1725.5	UT20736-04451
04-01	6/30/1996	1996	1975	5082	C08.2	0.83	1700	0.77903	1.015	1725.5	UT20736-04322
30-07	2/2/2007	2007	1742	4635	C04	0.82	N/A	#VALUE!	1.015	1742	UT20736-07418
29-03	11/1/2000	2000	1700	4064	B01	0.86	1759	0.87881	1.015	1785.385	UT20736-04541
08-06	1/1/1995	1995	2155	4556	C05.2	0.91	1780	0.83605	1.015	1806.7	UT20736-04203
19-01	6/7/1999	1999	1835	4035	B05	0.89	N/A	#VALUE!	1.015	1835	UT20736-04502
21-06	1/8/1997	1997	2183	4698	C04	0.90	1820	0.8327	1.015	1847.3	UT20736-04388
29-09	4/21/1995	1995	1900	4773	C06	0.84	1834	0.8295	1.015	1861.51	UT20736-04233
28-06	1/8/1997	1997	1663	4659	C04	0.80	1850	0.84253	1.015	1877.75	UT20736-04380
18-02	1/1/1995	1995	1900	3972	B06.2	0.92	N/A	#VALUE!	1.015	1900	UT20736-04202
15-12	1/14/2002	2002	1900	4328	B06.1	0.88	N/A	#VALUE!	1.015	1900	UT20736-04640
18-14	6/27/2007	2007	1405	3873	B06.2	0.80	1877	0.9314	1.015	1905.155	UT20736-07536
21-05	1/12/2004	2004	1865	4462	B11	0.86	1890	0.86943	1.015	1918.35	UT20736-06478
16-16	1/2/1998	1998	2093	4481	B10	0.91	1900	0.86987	1.015	1928.5	UT20736-04418
07-11	7/18/2005	2005	1900	4036	B06.1	0.91	1924	0.92336	1.015	1952.86	UT20736-04637
16-13	1/13/2006	2006	1790	4790	C05	0.81	1930	0.84846	1.015	1958.95	UT20736-06605
21-10	2/1/2007	2007	1437	4650	C04	0.75	1972	0.86994	1.015	2001.58	UT20736-07117
09-15	2/27/2006	2006	1660	4543	B11	0.80	1980	0.88187	1.015	2009.7	UT20736-06698
16-08	1/2/1998	1998	2035	4552	B11	0.89	1989	0.883	1.015	2018.835	UT20736-04414
30-15	7/18/2005	2005	2023	3960	B00	0.95	N/A	#VALUE!	1.015	2023	UT20736-04446
28-05A	1/2/1998	1998	2106	4724	C05.2	0.89	1996	0.86836	1.015	2025.94	UT20736-04410
28-03	1/8/1997	1997	2336	4634	C04	0.94	2000	0.87756	1.015	2030	UT20736-04389
29-08	7/25/2007	2007	1680	4630	C05	0.80	2000	0.87794	1.015	2030	UT20736-07123
28-11	6/27/2007	2007	1745	4809	C08.1	0.80	2001	0.86183	1.015	2031.015	UT20736-07120
18-15	1/8/1997	1997	2156	3862	B06.3	1.00	2010	0.96776	1.015	2040.15	UT20736-04391
08-07	1/8/1997	1997	2579	4399	B10.2	1.03	2016	0.90466	1.015	2046.24	UT20736-04381
21-04	1/28/2005	2005	1777	4741	C05	0.81	2021	0.87217	1.015	2051.315	UT20736-06521
16-14	2/6/2006	2006	1645	4485	B11	0.81	2030	0.8989	1.015	2060.45	UT20736-06606
16-12	8/31/2000	2000	1900	4261	B06.2	0.89	2067	0.93187	1.015	2098.005	UT20736-04553
05-16	1/8/1997	1997	1950	4816	C05.2	0.84	2070	0.87576	1.015	2101.05	UT20736-04327
04-05	1/2/1998	1998	1915	4328	B06.2	0.88	2078	0.92683	1.015	2109.17	UT20736-04328
29-05	7/22/2005	2005	1670	4226	B06	0.83	2080	0.93907	1.015	2111.2	UT20736-06483
18-11	8/19/2000	2000	1960	4736	C06	0.85	2084	0.88613	1.015	2115.26	UT20736-04520
29-07	7/25/2007	2007	1480	4080	B05	0.80	2110	0.95491	1.005	2120.55	UT20736-07122
08-04	1/1/1995	1995	2065	3974	B06.2	0.96	2100	0.97586	1.015	2131.5	UT20736-04201
33-08D3	2/6/1999	1999	2376	4343	B06.2	0.99	2100	0.93028	1.015	2131.5	UT20736-04422
04-13	9/5/2001	2001	1900	4286	B06.2	0.88	2100	0.93681	1.015	2131.5	UT20736-04536
17-01	3/13/2006	2006	1660	4542	B11	0.80	2100	0.90878	1.015	2131.5	UT20736-06699
21-14	2/17/2006	2006	1685	4628	C04	0.80	2110	0.90225	1.015	2141.65	UT20736-06481
05-08	11/25/1996	1996	2055	4283	B06.2	0.92	2135	0.94545	1.015	2167.025	UT20736-04324
29-12	5/7/2000	2000	1900	4600	C04	0.85	2135	0.91059	1.015	2167.025	UT20736-04523
18-12	7/17/2006	2006	1590	4351	B10	0.80	2150	0.94105	1.015	2182.25	UT20736-06680
29-16	8/31/2000	2000	1780	4619	C04	0.82	2150	0.91195	1.015	2182.25	UT20736-04475
18-10	1/10/2007	2007	1650	4519	C06	0.80	2174	0.92779	1.015	2206.61	UT20736-06679
19-15	8/31/2000	2000	1900	4475	B10	0.86	2188	0.93577	1.015	2220.82	UT20736-04496
16-04	8/31/2000	2000	1900	4484	B10.1	0.86	2190	0.93522	1.015	2222.85	UT20736-04551
16-06	1/31/2001	2001	2030	4511	B11	0.89	2190	0.93226	1.015	2222.85	UT20736-04546
21-15	8/31/2000	2000	1900	4638	C04	0.85	2196	0.92008	1.015	2228.94	UT20736-04522
21-11	8/23/1997	1997	2196	4652	C04	0.91	2197	0.91885	1.015	2229.955	UT20736-04365
07-14	8/31/2000	2000	1140	4103	B05	0.72	2200	0.98373	1.015	2233	UT20736-04495
18-09	1/1/1995	1995	2100	4442	C04	0.91	2200	0.9422	1.015	2233	UT20736-04204
30-08	1/8/1997	1997	2201	4714	C05	0.91	2201	0.91341	1.015	2234.015	UT20736-04359
20-14	1/31/2007	2007	1545	4226	B06.3	0.81	2212	0.97077	1.015	2245.18	UT20736-04540
19-07	5/7/1999	1999	1985	4440	C03.2	0.89	2216	0.94608	1.015	2249.24	UT20736-04491
28-05	8/1/2007	2007	1705	4708	C05.2	0.80	2230	0.92026	1.015	2263.45	UT20736-06483
16-07	1/24/2006	2006	1658	4528	B11	0.81	2240	0.94162	1.015	2273.6	UT20736-06603
19-09	8/31/2000	2000	1900	4736	C05	0.84	2243	0.92021	1.015	2276.645	UT20736-04536
03-14	4/23/2007	2007	2230	4314	B05	0.96	2250	0.96888	1.015	2283.75	UT20736-04434

16-15	1/19/2006	2006	1930	4543	B11	0.86	2266	0.94577	1.015	2299.99	UT20736-06607
16-10	8/31/2000	2000	2030	4542	B11	0.89	2285	0.95012	1.015	2319.275	UT20736-04503
21-12	1/28/2005	2005	1850	4670	C04	0.84	2291	0.93743	1.015	2325.365	UT20736-06479
20-02	7/25/2007	2007	1640	4527	B11	0.80	2300	0.95518	1.015	2334.5	UT20736-07114
21-02	1/25/2005	2005	2235	4694	C04	0.92	2302	0.93726	1.015	2336.53	UT20736-06477
04-02	1/2/1998	1998	2344	5360	D07	0.88	2330	0.88072	1.015	2364.95	UT20736-04356
28-04	7/23/2007	2007	1670	4612	C05	0.80	2330	0.95228	1.015	2364.95	UT20736-07118
18-05	1/23/1999	1999	2243	4308	B10	0.96	2335	0.98964	1.015	2370.025	UT20736-04472
16-09	11/14/2005	2005	1865	4778	C04	0.83	2351	0.93892	1.015	2386.265	UT20736-06604
18-07	6/22/2006	2006	1720	4698	C08.2	0.81	2357	0.94872	1.015	2392.355	UT20736-06677
16-11	12/19/1997	1997	2396	4546	B11	0.97	N/A	#VALUE!	1.015	2396	UT20736-04393
20-13	8/31/2000	2000	1974	4416	B10.1	0.89	2372	0.98469	1.015	2407.58	UT20736-04494
29-10	6/27/2007	2007	1405	4338	B10	0.76	2375	0.99519	1.015	2410.625	UT20736-07124
18-08	1/8/1997	1997	2030	4384	C04	0.90	2377	0.98983	1.015	2412.655	UT20736-04355
19-11	8/11/2000	2000	1935	4421	C06	0.88	2398	0.99004	1.015	2433.97	UT20736-04521
29-13	2/26/2007	2007	1458	4016	B02	0.80	2398	1.04556	1.015	2433.97	UT20736-07417
18-16	7/23/2007	2007	1580	4354	B12	0.80	2405	1.00015	1.015	2441.075	UT20736-07415
29-14	11/16/2001	2001	1900	4005	B02	0.91	2420	1.0528	1.015	2456.3	UT20736-04641
21-03	1/2/1998	1998	2451	4714	C04	0.96	2422	0.96099	1.015	2458.33	UT20736-04363
29-15	7/25/2007	2007	1575	4341	B10	0.80	2498	1.02357	1.015	2500	UT20736-07126
21-13	9/14/2005	2005	1870	5107	D03.2	0.81	2500	0.93636	1.015	2500	UT20736-06480
18-06	3/13/2006	2006	1575	4312	B10	0.80	2524	1.03362	1.015	2500	UT20736-06678
16-03	12/15/2005	2005	1905	4540	B11	0.86	2530	1.00512	1.015	2500	UT20736-06601
19-05	3/16/2001	2001	1900	4102	B10.1	0.90	2546	1.06948	1.015	2500	UT20736-04535
33-16D3	2/6/1999	1999	2512	4592	B11	0.99	2550	1.00314	1.015	2500	UT20736-04423
30-01	1/8/1997	1997	2497	4830	C06	0.96	2572	0.97999	1.015	2500	UT20736-04362
04-11	8/31/2001	2001	1900	4383	B07	0.87	2600	1.04159	1.015	2500	UT20736-04635
18-13	1/30/1998	1998	2490	3927	B06.1	1.07	2616	1.11564	1.015	2500	UT20736-04392
16-02	1/2/1998	1998	2481	4535	B11	0.99	2644	1.03126	1.015	2500	UT20736-04412
16-01	1/9/2006	2006	1660	4547	B11	0.80	2796	1.06363	1.015	2500	UT20736-06600
33-10D3	1/2/1998	1998	2248	4474	B08	0.94	2800	1.07472	1.015	2500	UT20736-04421
33-14 D3	1/22/1999	1999	2369	4330	B06.2	0.99	2840	1.10522	1.015	2500	UT20736-04420
29-01	4/24/2001	2001	1900	5014	D03	0.82	2840	1.01441	1.015	2500	UT20736-04619
16-05	4/17/2006	2006	1614	4408	B08.1	0.81	2841	1.09367	1.015	2500	UT20736-06602
19-13	1/5/2000	2000	1740	3942	B10.1	0.88	2852	1.17384	1.015	2500	UT20736-04618
07-16	1/2/1998	1998	2239	3975	B06	1.00	2860	1.16978	1.015	2500	UT20736-04419
29-02	7/26/2007	2007	1325	4511	B12	0.73	2864	1.08391	1.015	2500	UT20736-07121
07-15	7/4/2007	2007	1480	4080	B06.1	0.80	2864	1.15199	1.015	2500	UT20736-07414
19-16	1/30/2007	2007	1580	4332	B07.2	0.80	2900	1.11897	1.015	2500	UT20736-07113
19-03	1/8/1997	1997	2465	4078	B11	1.04	2906	1.16279	1.015	2500	UT20736-04390
29-08A	1/8/1997	1997	1915	4678	C05	0.85	2910	1.07089	1.015	2500	UT20736-04325
29-04	8/16/2005	2005	1655	4574	C02	0.80	3061	1.11875	1.015	2500	UT20736-06482
18-03	3/13/2006	2006	1675	4580	C04	0.81	3100	1.1265	1.015	2500	UT20736-06701
30-10	8/31/2000	2000	1310	4140	B05	0.76	3154	1.21276	1.015	2500	UT20736-04524
30-16	8/31/2000	2000	1900	4324	B08.1	0.88	3162	1.18173	1.015	2500	UT20736-04417
29-11	4/25/2007	2007	1540	4246	B08.1	0.80	3250	1.2164	1.015	2500	UT20736-07125
30-14	8/31/2000	2000	1900	4385	B10.1	0.87	3276	1.19779	1.015	2500	UT20736-04525
07-09	1/2/1998	1998	2817	4162	B08.1	1.12	3556	1.30671	1.015	2500	UT20736-04415

All MAIP over 2500 psi have been limited to 2500 PSI